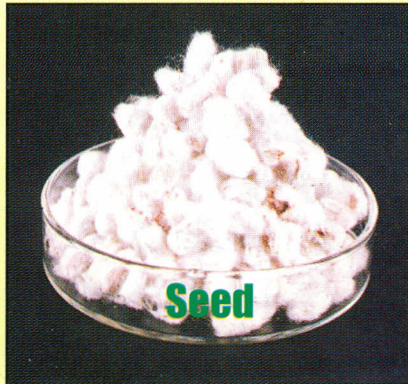


## **PROTEIN HYDROLYSATE (PEPTONE) FROM COTTONSEED MEAL**



**Central Institute for Research on Cotton Technology**  
(Indian Council of Agricultural Research)  
Adenwala Road, Matunga,  
Mumbai 400 019

## **Introduction**

Cotton (*Gossypium* sp.) is mainly grown for lint and the seed obtained after ginning is considered as a by-product. Traditionally, cottonseeds are fed as such to cattle in India. Realising the importance of oil and protein in the meal, emphasis has been laid on crushing cottonseeds scientifically during which linters, hulls, oil and meal are obtained as by-products.

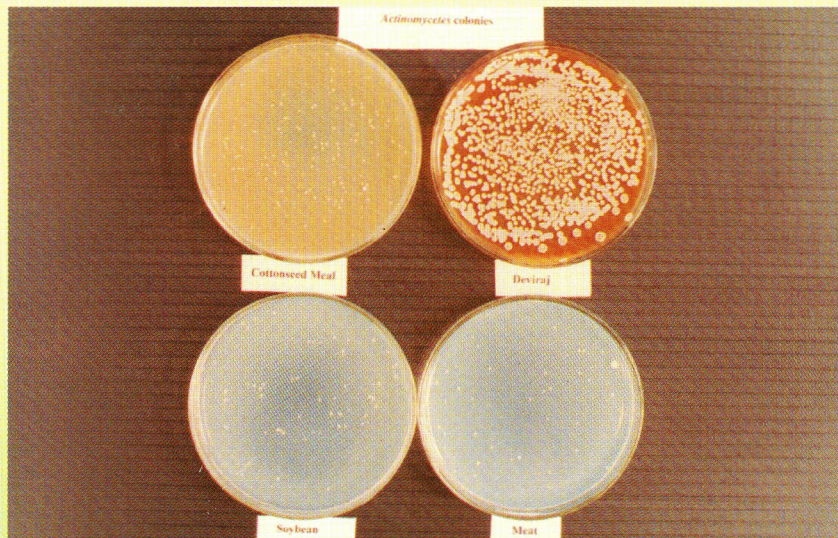
As much as 37 million metric tonnes of cottonseeds are available in India and by resorting to scientific extraction of cottonseed oil, about 12 million metric tonnes of high quality cottonseed meal can be obtained.

## **What are Peptones?**

Peptones are partially hydrolysed proteins obtained by treating the meal by using acids or enzymes. They are used as nitrogen source in microbiological media to produce enzymes, antibiotics, vitamins etc. They are completely soluble in water and do not precipitate at high temperature unlike the meal.

## **Scenario**

In India, as much as 125 metric tonnes of peptones are being consumed as against the production of 100 metric tonnes. They are usually prepared from meat, groundnut and soya proteins.



*Actinomycetes Colonies*

About 25 metric tonnes of speciality grade peptone is being imported to meet the deficit.

### **Process**

CIRCOT has developed and patented an enzymatic method to prepare peptones from cottonseed meal. Pancreatin and papain are the two enzymes employed in the process. The hydrolysed material was extracted in water and spray dried.

### **Properties of Cottonseed Meal Peptone\***

Yield of Hydrolysate (%)	pH	Total Nitrogen (%)	Amino Nitrogen (%)	Degree of hydrolysis (%)	Ash (%)	Carbo-hydrate (%)
68	5.1	9.7	2.8	28.6	11.3	4.0

\* Comparable with imported product

### **Application**

- For growing microorganisms
- For producing enzymes
- For manufacturing antibiotics
- For preparation of bio-pesticides
- In bakery products

### **Economics**

	Rs./Kg
Raw Material (Cottonseed)	8
Cottonseed meal	20
Processing cost (Peptone preparation)	125 - 1000 (Depending on quality)
Cost of Peptone	300-1500 (Depending on quality)
Net Profit	175-500



### **For further information contact :**

The Director,  
Central Institute for Research on Cotton Technology  
(Indian Council of Agricultural Research)  
Adenwala Road, Matunga, Mumbai 400 019  
Telephone : 2412 7273, 2412 7276, 2415 7238, 2415 7239,  
2418 4274, 2418 4275  
Fax : 022-2413 0835  
E-mail : circot@vsnl.com or circot@bom.nic.in